Registration of ‘Jupiter’ Rice

‘Jupiter’ (*Oryza sativa* L.) (Reg. No. CV-119, PI 639742) is a high yielding, early maturing, and short stature medium-grain rice cultivar that was officially released by the Louisiana State University Agricultural Center (LSU AgCenter) in 2004. It was developed at the Rice Research Station, Crowley, LA, by the LSU AgCenter in cooperation with the Arkansas Agricultural Experiment Station, the Mississippi Agricultural and Forestry Experiment Station, and the Texas Agricultural Experiment Station.

Jupiter originated from the cross ‘Bengal’/'Rico 1’/3/‘Bengal’/'Mercury’/'Rico 1’ (96CR025) made in 1996 in Crowley, LA. Bengal is a high-yielding, early maturing, semidwarf medium-grain cultivar developed and released by the LSU AgCenter (Linscombe et al., 1993). Rico 1 is a high yielding, midseason, conventional height medium-grain cultivar released by the USDA-ARS in conjunction with the Texas A&M University Agricultural Research and Extension Center, Beaumont, TX (Bollich et al., 1990). Mercury is a high yielding, early maturing, semidwarf medium-grain cultivar released by the LSU AgCenter (McKenzie et al., 1988).

Jupiter was developed from the bulk of a F₃ panicle row (No. 9925755) in 1999. It was tested in the preliminary yield trials (PY) in Crowley, LA, as entry PY840, in both 2000 and 2001 and advanced to the Cooperative Uniform Regional Rice Nurseries (URRN) in 2002 with the designation of RU0202183. Meanwhile, the line was also evaluated in the Louisiana Commercial Advanced tests during 2002–2004.

Jupiter has an excellent grain yield and good milling yield. In 37 statewide and regional trials during 2002–2004, average grain yield of Jupiter was 8734 kg ha⁻¹ at 120 g kg⁻¹ moisture compared with 8173 and 7686 kg ha⁻¹ for Bengal and Medark, respectively. In 11 state and regional tests (2002–2004), average ratoon yield for Jupiter was 2702 kg ha⁻¹ at 120 g kg⁻¹ moisture compared with 2753 kg ha⁻¹ and 2906 kg ha⁻¹ for Bengal and Medark, respectively. Average milling yields (mg g⁻¹ whole milled kernels: mg g⁻¹ total milled rice) at 120 g kg⁻¹ moisture in 20 state and regional tests from 2002–2004 were 655:704 for Jupiter, 663:714 for Bengal, and 653:704 for Medark.

Jupiter is moderately resistant to lodging. Under drill seeding condition, the average plant height of Jupiter in 33 trials is 94 cm compared with 96 cm for Bengal and 95 for Medark, while the average number of days from emergence to 50% heading for Jupiter in 37 trials was 85 d as compared with 85 d for Bengal and 84 d for Medark.

Jupiter has typical U.S. medium-grain rice cooking characteristics as described by Webb (1991). A comparison of kernel dimensions of Jupiter with other commercial medium-grain cultivars indicates that it has a medium-grain size. Brown rice dimensions for Jupiter were 5.87 mm L, 2.82 mm W, thickness 1.97 mm, L/W 2.08, and kernel weight 22.5 mg compared to 6.43, 2.66, 1.96, 2.42, and 24.1 for Bengal; and 6.01, 2.73, 1.93, 2.20, and 23.7 for Medark. Average apparent amylose content of Jupiter is 145, similar, with 131, 145, and 150 for Bengal and Medark, respectively. The amylose content of the reference variety ‘Bengal’ is 210.

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Jupiter is resistant to race IB-54 but moderately susceptible to races IC-17, IB-49, IG-1, and IE-1K. However, results from five field evaluations conducted in Louisiana and Arkansas from 2002–2004 indicated that Jupiter is resistant to race IB-54 but moderately susceptible to races IC-17, IB-49, IG-1, and IE-1K. In 14 inoculated disease nursery tests from 2002–2004, Jupiter was moderately susceptible to sheath blight (caused by *Rhizoctonia solani* Kühn), disease scale of 0 = immune, 9 = highly susceptible, with 5.6 for Bengal. Results from blast nursery leaf blast (caused by *Pyricularia grisea* (C. & Harz) Sacc.) indicated that Jupiter is resistant to race IB-54 but moderately susceptible to races IC-17, IB-49, IG-1, and IE-1K. In 14 inoculated disease nursery tests from 2002–2004, Jupiter was moderately susceptible to sheath blight (caused by *Rhizoctonia solani* Kühn), disease scale of 0 = immune, 9 = highly susceptible, with 5.6 for Bengal. Results from blast nursery leaf blast (caused by *Pyricularia grisea* (C. & Harz) Sacc.) indicated that Jupiter is resistant to race IB-54 but moderately susceptible to races IC-17, IB-49, IG-1, and IE-1K.